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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,285	10/15/2001	Eliel Louzoun	P-4101-US	1347
27130	7590	08/26/2004	EXAMINER	
EITAN, PEARL, LATZER & COHEN ZEDEK LLP 10 ROCKEFELLER PLAZA, SUITE 1001 NEW YORK, NY 10020			STEELMAN, MARY J	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/976,285	Applicant(s) LOUZOUN ET AL.	
	Examiner Mary J. Steelman	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/15/01, 01/10/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-28 are pending.

Claim Objections

2. Claims 25 recites "Apparatus according to claim 1...", should be -Apparatus according to claim 19...-- Examiner will treat claim 25 as if it were dependent upon claim 19.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8, 19-28 are rejected under 35 U.S.C. 102(b) as being unpatentable over US Patent 5,003,591 to Kauffman et al.

Kauffman disclosed:

Per claim 1:

A method comprising:

Col. 13, line 33, "...method..."

-managing downloading of at least two firmware functions, which are accessible by more than one driver, with one processor.

Col. 2, lines 46-53, "The converter includes means for receiving firmware downloaded over a cable television network...", col. 13, lines 42-45, "A multiplicity of firmware

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packages (at least two firmware functions) may be carried on a single system, with different terminals (accessible by more than one driver) in the system accepting and executing different packages as specified by the system headend.”

Per claim 2:

-said managing comprises reducing a risk or at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

Col. 2, lines 49-50, “Means are provided for verifying the integrity of the firmware...”, col. 2, line 53-59, “...means for storing default operation software...”, col. 4, lines 36-49, “...The verifying means can operate by testing a checksum...”

Per claim 3:

-said managing comprises downloading at least two said firmware functions with a single download.

Col. 2, lines 44-53, “...converter with remotely modifiable functionality is provided...means for receiving firmware downloaded...to provide one or more converter functions dictated by the firmware...”, col. 6, line 66-col. 7, line 5, “...a plurality of different firmware packages are broadcast on the secondary channel, each package providing different converter functions or combinations of functions...”

Per claim 4:

said managing comprises managing downloading of firmware common to at least two of said drivers.

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Col. 3, lines 18-25, "...firmware can implement a communication protocol for the converter, a descrambling technique...an on-screen display..."

Per claim 5:

-wherein said managing comprises managing downloading of firmware by more than one access operation of the same driver.

Col. 3, lines 41-45, "Means are provided for transmitting addressable converter data on a first data channel...on a second channel...", col. 4, line 17-21, "...remotely modifiable user terminal is provided which comprises means for receiving a plurality of...transmitted firmware segments..."

Per claim 6:

-for at least one of said drivers, implementing a functionality common to another of said drivers.

Col. 3, lines 11-24, "The downloaded firmware received and stored by the converter can implement a functional layout on a keyboard associated with the converter..."

Per claim 7:

-for at least one of said drivers, implementing a different functionality than another of said drivers.

Col. 5, line 66 -col. 6, line 7, "...different firmware packages downloaded by headend to converter may provide different converter functions..."

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Per claim 8:

-initializing at least one of said drivers with information to determine a desired firmware sufficient to implement a desired functionality.

Col. 7, lines 29-41, "...assign (determine a desired firmware sufficient to implement a desired functionality) a new firmware package to a particular converter, addressable controller is commanded to transmit instructions to the converter. The instructions are received..."

Per claim 19:

-a multi-function device that comprises at least two firmware functions which are accessible by more than one driver;

-a processor adapted to manage downloading of said at least two firmware functions.

(Limitations of claim 19 have been addressed in claim 1 above.)

Per claim 20:

-processor is adapted to reduce a risk of at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

(See limitations addressed in claim 2 above.)

Per claim 21:

-processor is adapted to download at least two said firmware functions with a single download.

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(See limitations addressed in claim 3 above.)

Per claim 22:

-processor is adapted to manage downloading of firmware common to at least two of said drivers.

(See limitations addressed in claim 4 above.)

Per claim 23:

-at least one of said drivers is adapted to implement a functionality common to another of said drivers.

(See limitations addressed in claim 6 above.)

Per claim 24:

-at least one of said drivers is adapted to implement a different functionality than another of said drivers.

(See limitations addressed in claim 7 above.)

Per claim 25:

-at least one of said drivers is initialized with information to determine a desired firmware sufficient to implement a desired functionality.

(See limitations addressed in claim 8 above.)

Per claim 26:

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A system comprising:

-a multi-function device that comprises at least two firmware functions that are accessibly by more than one driver;

-a processor adapted to manage downloading of said at least two firmware functions;

-a memory in communication with said processor.

(See limitations addressed in claim 1 above.)

Per claim 27:

-said processor is adapted to reduce a risk of at least one of said drivers overwriting firmware that has been downloaded and is being used by another of said drivers.

(See limitations addressed in claim 2 above.)

Per claim 28:

-said processor is adapted to download at least two said firmware functions with a single download.

(See limitations addressed in claim 3 above.)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,003,591 to Kauffman et al., in view of US PreGrant Publication 2002/0166061 A1 to Falik et al.

Kauffman disclosed functionally modifiable firmware. Kauffman failed to disclose specific details regarding downloading of updates, and the required access permissions. However Falik disclosed:

Per claim 9:

-verifying for said at least one of said drivers if said desired firmware has been downloaded by another function.

[0037], "...indication whether the update data is valid...", [0064] "...method for FM (flash memory) device protection in which an Embedded Controller (EC) is utilized to manage and control the device protection and access permission...", [0120], "...EC receives the 'Update Data'...and performs a validation test..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls and verification, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby

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enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 10:

-checking at least one of a register and a bit accessible by said at least two functions if said desired firmware has been downloaded by another function.

Falik disclosed registers and bits used for access controls. [0114], FIG. 6 & “...Shared Memory Host Semaphore Register (SMHSEM)...consists of the EC’s Semaphore bits...

A plurality of functions can access the shared memory.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman’s invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls and verification using registers and bits, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters” via an enabling reprogramming.

Per claim 11:

-if said desired firmware has not been downloaded by another function then downloading said desired firmware for said at least one of said drivers.

FIGs. 8 & 9, [0120], “...Typically EC will be executing its code as Host issues a request to gain control over the FM device and to start updating the FM...” Host decides to download update code.

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding downloads, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 12:

-locking access to said desired firmware by drivers other than said at least one of said drivers.

[0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through semaphore locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 13:

-said locking access comprises memory spin locking.

[0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through semaphore locks (spin locking), because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 14:

-said locking access comprises PCI (peripheral component interface) bus locking on a memory location of said at least one of said drivers.

[0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 15:

-locking access comprises locking a device memory register.

[0114] Shared Memory Host Semaphore Resister is used to control reads / writes.

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Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls through locks, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 16:

-setting a register that said downloading said desired firmware is finished.

FIG. 9 & [0120], "...When Host completes transmission of the 'Update Data' ..., [0122],
"...If a 'valid' indication is received...the procedure proceeds...where the update is actually performed...when the update is complete..."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls, registers, and bit flags to indicate completion, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 17:

-implementing said desired firmware.

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[0122], "...Performing a soft reset...that re-initializes both EC and Host completes the operation."

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding updating and implementing firmware after a verification process, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming.

Per claim 18:

-permitting access to said desired firmware by drivers other than said at least one of said drivers.

FIG. 8, #837, Normal Operation, After update is successfully validated access is granted to drivers for normal processing after a reset or re-boot operation.

Therefore, it would have been obvious, to one of ordinary skill in the art, at the time of the invention, to modify Kauffman's invention regarding functionally modifiable firmware, to include specific details as provided by Falik regarding access controls to downloaded firmware update, because both inventions reference firmware updates, Falik merely provides more details that are required to ensure correct replacement of code when thereby enabling [0003] updates, bug fixes, and storage of critical changing parameters" via an enabling reprogramming. After completion of a

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satisfactory update, the program may follow normal processing. Multiple drivers may access shared memory.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary Steelman, whose telephone number is (703) 305-4564. The examiner can normally be reached Monday through Thursday, from 7:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Mary Steelman



08/19/2004



**ANTONY NGUYEN-BA
PRIMARY EXAMINER**